



Improving Frontline Staff Confidence and Efficiency in a Computed Tomography (CT) Protocol Management System (PMS)

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**SEEING
is
SAVING**

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Introduction

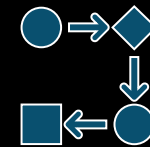
- ▶ **Background:** In the fast-paced environment of CT imaging, CT technologists and nursing staff, rely on clear accessible protocol instructions to ensure accurate and efficient patient care. However, the existing Protocol Management System (PMS) was challenging to navigate as well as time consuming to edit by the management team (leads). Additionally, broken links often disrupted workflow.
- ▶ **Purpose:** To develop a new CT Protocol Management System (PMS) to enhance navigation, expedite the editing process, and foster a more efficient workflow for a large CT practice.



Navigation



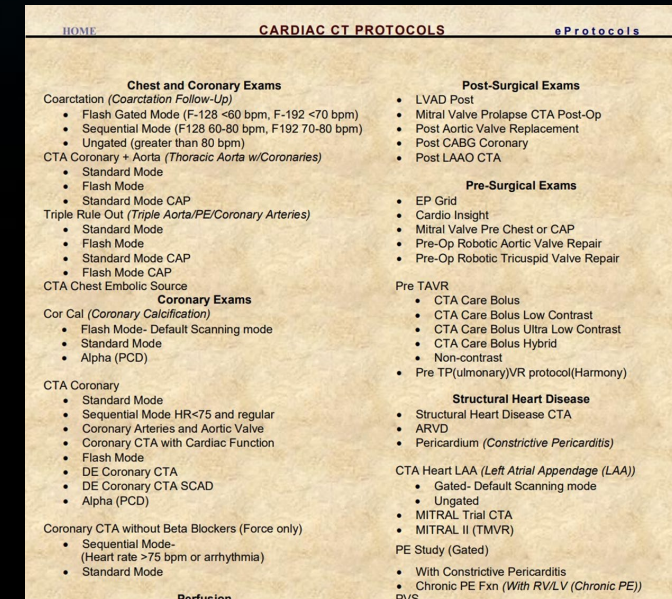
Editing



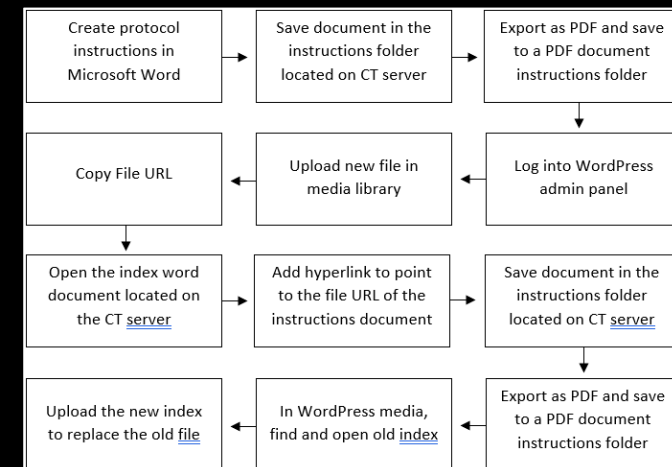
Workflow

Challenges with the Previous System

- ▶ Limited navigation options
 - Staff only had one way to search for a required protocol.
- ▶ Decreased protocol reliability
 - Many protocols have similar names and are prone to misidentification.
- ▶ Multi-step editing
 - Twelve steps required for adding a new protocol to the WordPress-based system.
- ▶ Broken links
 - Due to protocols being created in Microsoft Word and exported as Adobe PDF files.



Index page for Cardiac Protocols in the old PMS.



Workflow for the CT leads when adding a new protocol.

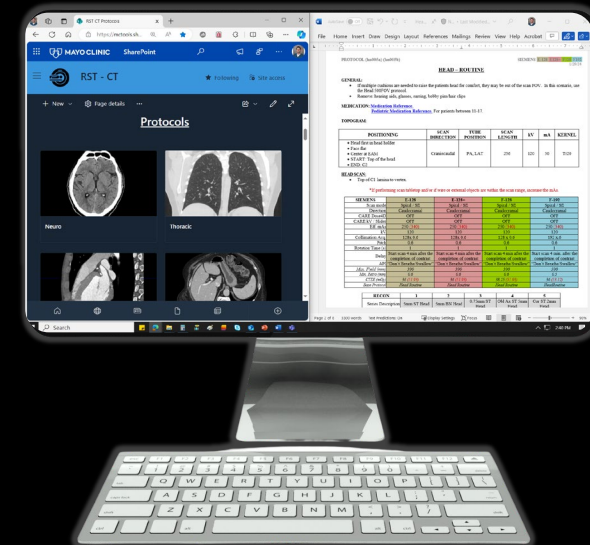
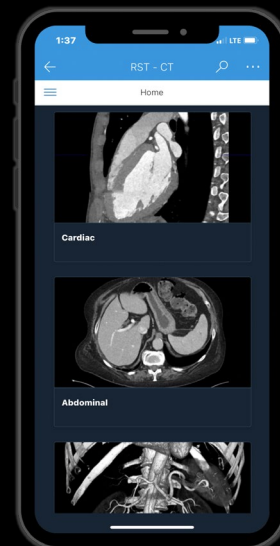
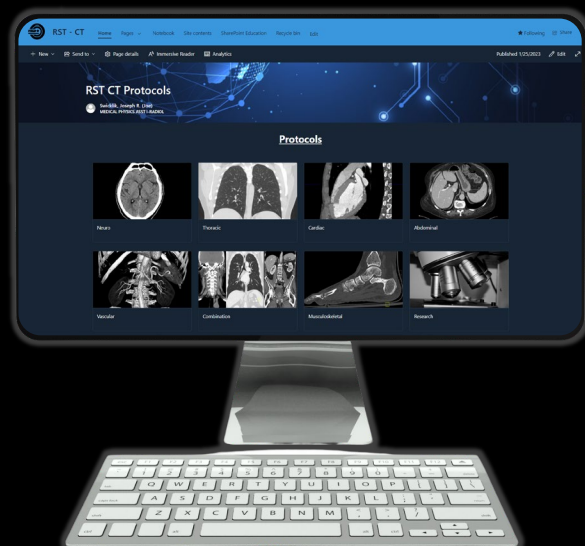
New Protocol Management System (PMS)

- ▶ Microsoft SharePoint was implemented as the new platform for storing protocol documentation, utilizing only Word documents for streamlined access.
- ▶ A user-friendly interface was developed, enabling frontline staff to easily navigate and locate the required protocols and supplemental resources.



End User Interface Improvements

- ▶ The new PMS offered several advantages to the end users (Technologists, RNs, and Radiologists), utilizing Microsoft SharePoint's out of the box features.
 - Responsive design adapts to screen size, supports split-screen and mobile use.
 - Easy theme editing. A dark theme was used to reduced eye strain in a dimly lit work unit.
 - Eliminated broken links caused by PDF conversion issues.

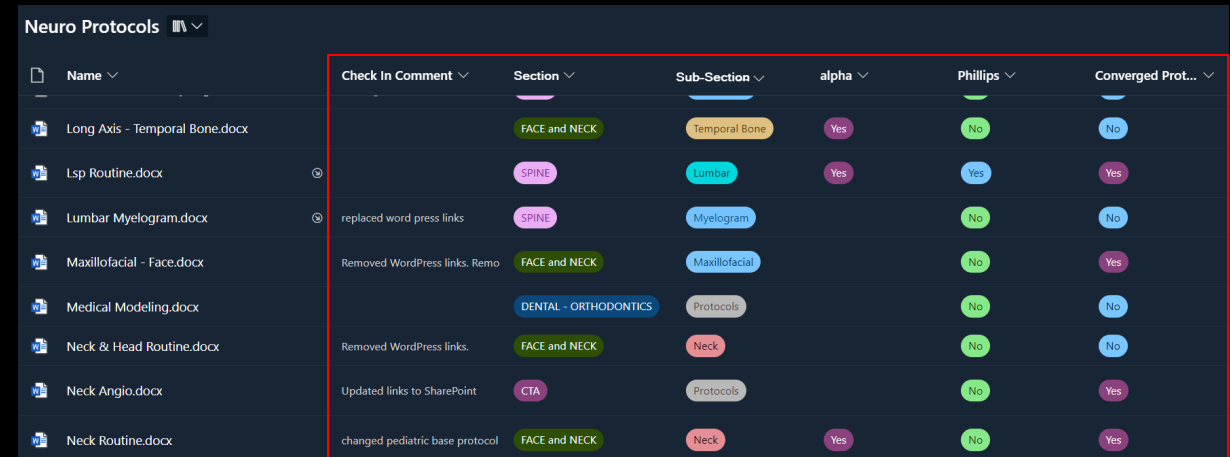


Improved Editing Workflow for the Leads

- ▶ By using Word documents for protocol creation and presentation, workflow steps were reduced by 75%, greatly reducing lead time for creating and editing protocols.
- ▶ The addition of metadata columns in the document library allows leads to filter protocols and identify which scanner assets each protocol was built on with ease.
- ▶ Real-time, remote collaboration capabilities on protocol development.



Workflow for New SharePoint PMS

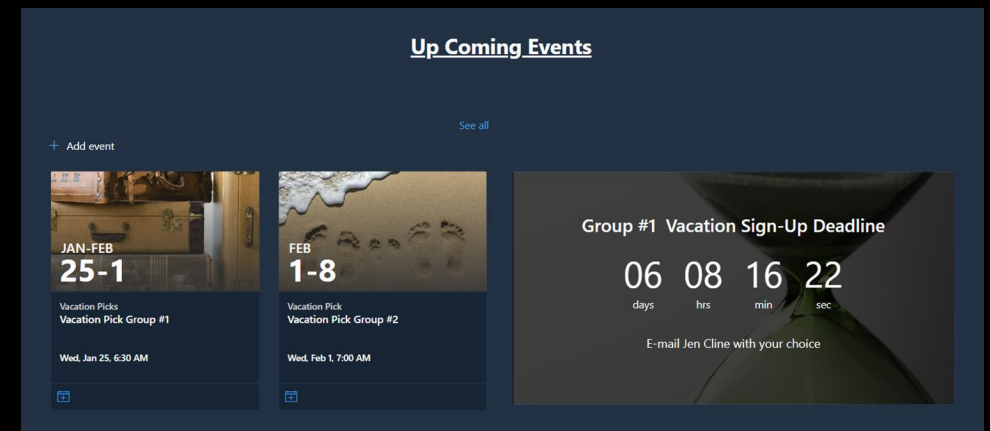


Name	Check In Comment	Section	Sub-Section	alpha	Phillips	Converged Prot...
Long Axis - Temporal Bone.docx		FACE and NECK	Temporal Bone	Yes	No	No
Lsp Routine.docx		SPINE	Lumbar	Yes	Yes	Yes
Lumbar Myelogram.docx	replaced word press links	SPINE	Myelogram		No	No
Maxillofacial - Face.docx	Removed WordPress links. Remo	FACE and NECK	Maxillofacial		No	Yes
Medical Modeling.docx		DENTAL - ORTHODONTICS	Protocols		No	No
Neck & Head Routine.docx	Removed WordPress links.	FACE and NECK	Neck		No	No
Neck Angio.docx	Updated links to SharePoint	CTA	Protocols		No	Yes
Neck Routine.docx	changed pediatric base protocol	FACE and NECK	Neck	Yes	No	Yes

Metadata columns

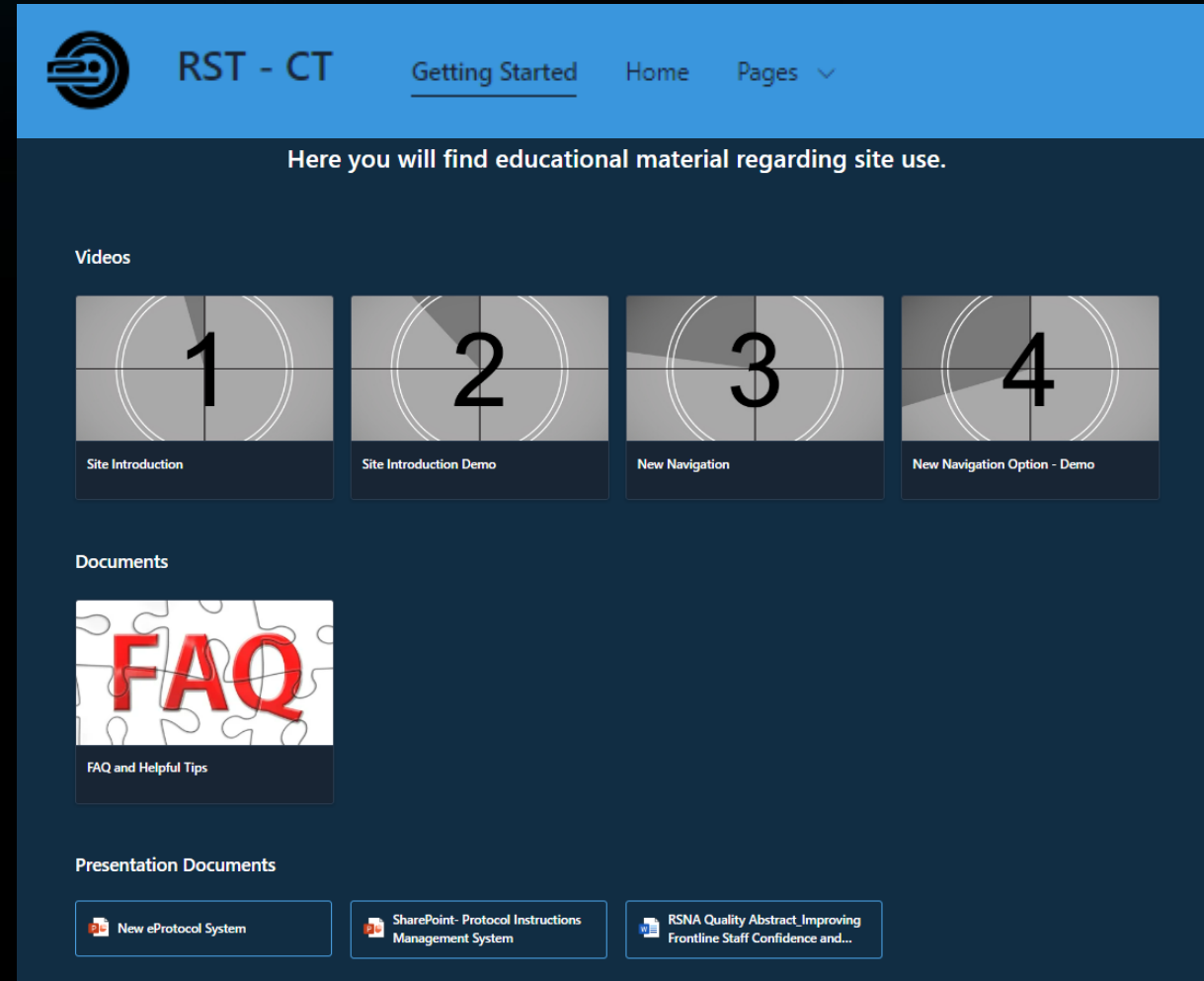
Additional Improvements

- ▶ News and Events web parts provides a platform for sharing departmental information on the home page.
- ▶ Audience targeting in SharePoint enables tailored content visibility for specific user groups.
- ▶ Automatic indexing of new protocols across layouts.
- ▶ Automated email alerts for new or edited protocols.
- ▶ Revision history for documents and pages.
- ▶ OneNote integration used by the lead team.
- ▶ Page comments enable frontline staff to report issues that auto-notify leads via email.



New PMS Implementation

- ▶ Parallel Launch: Ran SharePoint PMS alongside WordPress PMS for three weeks to ensure staff had ample time to adapt to the new user interface.
- ▶ Communication Methods: Emails, and department meetings.
- ▶ Education Methods: Department presentations, hands on training, FAQ documentation and video demos.



The screenshot shows the 'Getting Started' page of the RST - CT PMS site. The page has a blue header with the RST - CT logo and navigation links for 'Getting Started', 'Home', and 'Pages'. Below the header, a message states: 'Here you will find educational material regarding site use.' The page is organized into three sections: 'Videos', 'Documents', and 'Presentation Documents'. The 'Videos' section contains four video thumbnails numbered 1 through 4, with titles: 'Site Introduction', 'Site Introduction Demo', 'New Navigation', and 'New Navigation Option - Demo'. The 'Documents' section features a document icon with the text 'FAQ' and the title 'FAQ and Helpful Tips'. The 'Presentation Documents' section includes three document icons with titles: 'New eProtocol System', 'SharePoint- Protocol Instructions Management System', and 'RSNA Quality Abstract: Improving Frontline Staff Confidence and...'

Video demos, FAQ documentation, and presentations available via the Getting Started link on the PMS site.

User Group Surveys

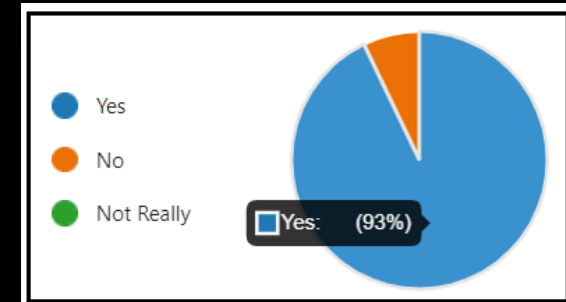
- ▶ Survey Groups: Lead technologists, nurses, and CT technologists.
- ▶ Metrics: Time savings, confidence scores, and satisfaction levels with the new vs. old PMS.
- ▶ Data Analysis and Insights: Improved search capabilities and metadata for protocol numbers increased efficiency and confidence.



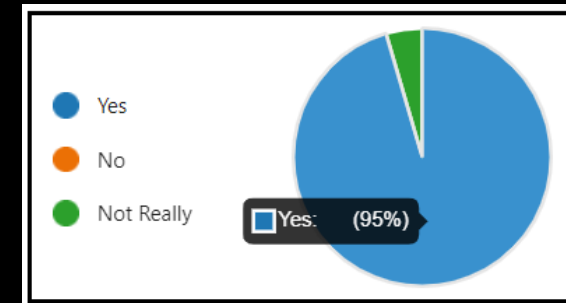
Reasons as reported by staff for the improved ability to find protocols and increased confidence in selecting the correct protocols.

Key Results

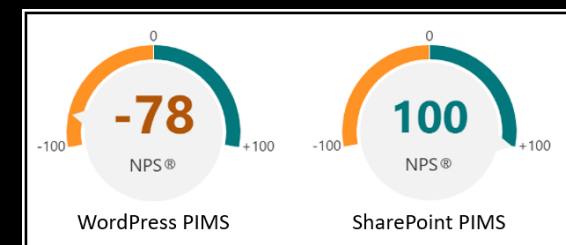
- ▶ **CT Technologists**
 - 71% improvement in protocols navigation.
 - 93% increase in confidence that staff chose the correct protocol.
- ▶ **Nursing Staff**
 - 91% improvement in protocols navigation.
 - 95% increase in confidence that staff chose the correct protocol.
- ▶ **Lead Technologists**
 - Time Savings: Average 27 minutes saved per document edit.
 - Satisfaction: 89% increase in NPS (Net Promoter Score) for usability.



CT Tech's confidence selecting correct. protocols.



Nursing's confidence selecting correct protocols.



Lead's site satisfaction (NPS) score.